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ABSTRACT

Teachers, Principals, and other public school personnel interested in establishing learning resource centers are provided with guidelines and a framework within which they can structure their efforts. Professional literature, observation, and experimental trials serve as the sources from which observations are drawn. The advantages of the resource center to students, teachers, and administrators are first listed. Following this, a sketch of the developmental stages involved in the establishment of a center is presented, covering the cataloging of materials, consideration of environmental standards, personnel specifications, and evaluation. Five appendixes describe: 1) card formats and codes, 2) space recommendations, 3) furniture specifications, 4) evaluation of audio visual materials, and 5) criteria for media equipment selection. A short bibliography authenticates sources of information. (Author/PB)

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Resource Centers - Some Ideas

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This study shows the advantages, a sketch, and goals of a learning center. It has attached appendixes which are valuable aids in card format, space, furniture, evaluation of audio-visual materials, and media equipment selection. It has a bibliography, and related references. The study itself was made by Klitzke to be an aid in actually establishing a learning center. It should show clearly many facets which are extremely important to those who are interested in learning centers.

Development of a Resource Center

This study of learning centers stems from several sources such as observation, experimentation or trial, but most importantly of pulling together several very good sources to provide an aid to teachers, principals, and other public school personnel who wish to establish a learning center.

Resource centers (media centers, instructional material centers, learning centers: same thing; different names) are in vogue. In vogue but not a fad. Resource centers offer fundamental advantages to students, to teachers, and to administrators.

This paper will examine these advantages and sketch the beginnings of and the standards for the development of a resource center.

ADVANTAGES

The advantages a resource center offers are three-fold: 1) to students; 2) to teachers; and, 3) to administrators.

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ABSTRACT

This study was done by Dwight Mark Klitzke, graduate student at Northern Illinois University and teacher at centers under the direction of Dr. John Starkey to give a practical, fundamental basis for establishing a learning center and a sketch of the design. The sketch includes preliminaries, environmental standards, personnel, and evaluation.

It gives the advantages, a sketch, a summary and goals. It has five appendixes to describe: (1) Card format and codes, (2) space recommendations, (3) furniture specifications, (4) evaluation of audio visual materials and, (5) criteria for media equipment selection.

In addition to the appendix, it has a short bibliography to authenticate the sources of information. This article should be an aid or beginning point for those who wish to establish learning centers in their school systems.

The resource center offers these advantages to children:

a) indicates all learning materials available in the building in print and in other media;

b) teaches how to use and locate materials;

c) provides atmosphere for individual and small group inquiry;

d) teaches how to evaluate materials;

e) teaches how to use outside sources for additional information;

f) develops skills in the production of learning materials;

g) encourages creativity;

h) gives increased dimension to learning through access to a variety of media; and,

i) provides materials of varying levels of difficulty and on a wide variety of subjects. (5)

The resource center offers these advantages to teachers:

a) catalogues all instructional materials that are available in the building;

b) provides a professional library;

c) assists in planning and preparing materials for a unit;

d) provides information on available outside resources;

e) aids in correlation of unit materials and activities with those available in the center;

f) provides information on new materials and techniques for instruction;

g) provides inservice training, including methods of using and evaluating materials and techniques;

h) provides examination and previewing facilities; and,

i) schedules materials and equipment for maximum availability and use.

The resource center offers these advantages to administrators:

a) provides central purchasing of learning materials and equipment;

b) maintains a constant and complete inventory of all non-textbook learning materials and equipment;

c) provides inservice training;

d) avoids unnecessary duplication of learning materials;

e) provides a central location and collection of statistical data, area facts, buying guides and other pertinent information;

f) maintains contact with other resource facilities in the area;

g) provides examination and previewing facilities;

h) maintains circulation-utilization records;

i) provides central distribution of materials and equipment;

j) supports the total school curriculum;

k) provides continuous orientation to new ideas;

l) simplifies maintenance of equipment; and,

m) provides a centralized location for the production of instructional materials. (5)

THE SKETCH

Acknowledging the benefits to be reaped from a resource center, the next step is grappling with the center's development. Consider all non-textbook materials currently available in the school building, space requirements, staff requirements, and material selection. Develop standards and evaluation procedures. Set goals.

Preliminaries

Catalogue all non-textbook materials. The classification system used

is not as important as its consistency or constancy. Materials may be catalogued by type, grade level, subject area, publisher, title, author, location in the school, or a combination of these. In a library, books are listed five ways in the card catalogue to facilitate location.

The large variety of media types in a resource center as well as the assortment of equipment demand a different card layout and more information than contained on the library book cards.

Examples of card format and code suggestions made by the Association for Educational Communication are found in Appendix A.

A resource center could exist as a cardfile with an equipment and material checkout. This would be the case if no classroom or other area in the school building could be set aside for a resource center. Equipment and materials would be housed, in this case, in specific classrooms with a central checkout area to maintain inventory and maximize utilization.

If a classroom, stage or specially constructed quarters can be found, decisions must be made, on the basis of space, about which materials will be based in the center and which will be based in classrooms or storerooms. In any case, strict checkout procedures for faculty members and administrators, as well as for students must be developed to keep tabs on all equipment and material.

Environmental Standards

If a classroom, stage or other area is available, certain environmental standards should be considered. The New Jersey State Department of Education had these general recommendations:

AESTHETICS

* The overall environment should be one of comfort, dignity, attractiveness and vitality.
* Attention should be given to fluidity, proportion and unity.

* Color contributes immeasurably to a desirable learning environment.
  - Greens and blues are restful
  - Reds, stimulating
  - Yellows, exhilarating
  - Browns and grays tend to be depressing
* Northern exposures will benefit by warm colors, such as yellows, reds and oranges. Southern exposures will benefit from cool colors such as greens and blues.

ACOUSTICS
* Agreeably quiet but not totally silent. This can be accomplished with carpeting and acoustical treatment of walls and ceilings.
* Various amounts of acoustical treatment should be provided within the Instructional Media Center according to the specific requirements of each area.

QUALITY LIGHTING
* Allows for maximum control of glare.
* Allows for a minimum of 50 foot-candles of artificial light at desk level.
* Has windows which permit, where desirable, a view of outside landscape.
* Has glare reducing glass.
* Would not permit large ornamental glass areas which produce light of a distracting nature and or detract from space requirements.
* Dimmers should be provided where appropriate.
* Is better achieved by using the following reflective factors:
  -Ceilings. 70-90%
  -Walls. 40-69%
  -Furniture. 35-50%
  -Floors. 15-50%
* Insures ample illumination in the stack areas, particularly for books on the lower shelves.

TEMPERATURE CONTROL
* Air-conditioning increases the efficiency and utilization of the areas.
* Ventilation equipment should be quiet. (4)

These general recommendations are supplemented by more specific standards established by the American Association of School Librarians in their booklet: Standards for School Media Programs. These standards are presented in part in Appendix B. Furniture specifications are in Appendix C.

Hours are also an important standard. Several references recommend that resource centers be open before and after school hours. In some areas, resource centers have evening hours. Longer hours means that resource centers be located

where the security of the rest of the school is not jeopardized.

Personnel

Personnel make or break a resource center. On them hinges the success or failure of the center.

A resource center is particularly demanding: efficient administration, effective public relations and sound curricular decisions require dedicated and talented professional. Library science is suggested as specialty. But more important is a knowledge of children and their needs in a particular school. And he should be certificated as an elementary school teacher. (5)

The professional resource center director should be a self-starter for he "initiates the services which change a roomful of materials into a well-functioning center of learning." (5) He must not be afraid to make decisions for he provides "guidance in selection of materials to be used and purchased. He organizes for maximum use." (5)

The professional is supported by non-professionals who type, keep records, send notices, open mail, handle office and circulation routines, reshelve or file materials, inspect and repair filmstrips, mount pictures and transparencies, maintain appearance of the center, and repair minor damage to print material. Training takes place on the job but typing and office work are valuable prerequisites. (5) Patience and gentleness with children is also a prerequisite. A competent non-professional frees the professional to aid teachers in material development, correlation of center materials with units of classroom studies, evaluation of materials in use or considered for use and assisting children.

The Iowa State Department of Public Instruction recommends that one professional be hired for every 499 students or major portion thereof in a school,

plus one non-professional to aid the professional for the first three years of the resource center. Two succeeding three year periods are to see the hiring of one professional and one nonprofessional for each 399 pupils and each major fraction thereof, and 299 pupils and each major fraction thereof. (5)

One of the professionals would be appointed the chairman. The Iowa Department of Public Instruction recommends that he have a Master's degree in library science. (5)

Evaluation

The first step in setting up a resource center is cataloguing all non-textbook materials for instruction now available in the school building. After this step, evaluation procedures should be established to provide the maximum learning resource per education dollar. The curriculum must be scrutinized. What areas need bolstering? Where are the students having difficulties? What items are seen as indispensable by faculty members? What items are used only occasionally and might best be supplied by the school district's material or resource center?

Criteria for judging audio visual materials as developed by Carlton W. H. Erickson are enumerated in Appendix D. Criteria for judging machines used in the resource center are found in Appendix E.

SUMMARY AND GOALS

This paper sets forth the advantages of a resource center and provides a sketch of procedures for development. As the development of the center progresses, these advantages become ongoing goals, the lifework of the center. They become the guidelines for the future. The center expands as necessary. The professional staff with supportive non-professionals aids the faculty in

creating a living, ever-changing, effective curriculum that meets the needs of the students.

And always the process of evaluation continues striving to better the next day.

APPENDIXES

APPENDIX A. Card Format and Codes

Title: subtitle (Medium Designation) Edition.
Producer-Sponsor-Releasing agent, date.

Physical Description. (Series)
Educational level.

Note. . . . . .
Note. . . . . .
Content description . . . . . .
. . . . . .
. . . . . .

Tracings

LC Classification Number Dewey Number

The above card is the general format of a card for a resource center.

Julius Caesar by William Shakespeare (Filmstrip)
Educational Audio Visual, 1964.

38 fr. color. 35 mm.

With teacher's guide and description of frames.
Credits: Photographs, Dick Land.
Summary: Pictures the highlights of the play Julius Caesar using photographs of an actual production.

I. Shakespeare, William, 1564-1616. Julius Caesar
II. Educational Audio Visual, Inc.

822.3

The above card shows how the general format is applied to a filmstrip.

ABC of puppet making, part 1 (motion picture)
Bailey Films, 1967.

10 min. sd. color. 16 mm.

Revised version of the 1955 motion picture.
With study guide.
Summary: Demonstrates procedures in making and dressing the simplest type of stringless hand puppet, and shows how inexpensive materials such as cardboard, cotton, an old sock, glue, thread and watercolor paints may be used simply and effectively.

1. Puppets and puppet plays. I. Bailey Films.

745.8

The above card shows how the general form is applied to a motion picture.

Reading for understanding (Kit) Science Research Associates, 1958.

400 lesson cards (arranged in 100 steps of reading difficulty, with 4 lessons at each level.), 40 answer key booklets, 1 student record book, 1 teacher's handbook, 1 placement test. In box 18 x 25 x 19 cm.

An individualized program of instruction for the improvement of reading for understanding. Developed by Thelma Thurstone for use in 5th grade through high school.

1. Reading (Elementary) -- Programmed instruction. I. Thurstone, Thelma Guinn. II. Science Research Associates.
LB1573 372.41

The above card shows how the general form is applied to a kit of programmed instruction.

A special task force of the Association for Educational Communications and Technology summarized the information on these cards and

suggested letter designations for the various media. Following is the suggested sequence of catalogue data:

A. Title
B. Medium
C. Edition
D. Producer-sponsor-releasing agent
E. Date of release
F. Physical Description
G. Series
H. Educational level and/or special audience
I. Notes (including summary and contents)
J. Tracings
K. Classification numbers

The suggested abbreviations follow:

PA	Art print	FM	Microform: Microfiche
RT	Audio tape	DM	Mock-up
PC	Chart	DM	Model
CT	Computer tape	MP	Motion picture (and film loops)
DD	Diorama	RD	Phonodisc (records)
FS	Filmstrip	PP	Picture (Photos, postcards)
PS	Flash card	TS	Slide
KL	Game	DS	Speciman (includes realia)
DM	Globe	PS	Study Print
KT	Kit (includes programmed materials	TR	Transparency
		MV	Videotape
PC	Map (includes relief maps)		
PM	Microform: Microcard (includes opaque microprint)		

APPENDIX B. Space Recommendations

The American Association of School Librarians make the following recommendations for space for the media program:

Functions	Special Aspects	Space in Square Feet
Entrance Circulation and distribution	Displays and exhibits, copying equipment, cardcatalogues, periodical indexes	800-1000
Reading and browsing Individual viewing and listening	No more than 100 students should be seated in one area	Space is based on 15 per cent of student enrollment at 40 sq. ft. per student
Individual study and learning Storytelling (elementary schools) Information services	30-40 per cent of seating capacity for individual study areas, equipped with power and capability of electronic and response systems and television outlets; area should be ducted for power and coaxial distribution Where carrels are used, suggested size is 36 in. wide and 24 in. deep, equipped with shelving and media facilities, including electrical power, television and response outlets Linear and other types of shelving for all types of materials	The instructional program in some schools may require that 1/3 to 3/4 of the student population be accommodated in the media center(s)
Conference rooms	Movable walls to allow for combining areas Electrical and television outlets and acoustical treatment One room, acoustically treated, with typewriters for student use	3-6 rooms with 150 sq. ft. each

Functions	Special Aspects	Space in Square Feet
Small group viewing and listening	In addition to space provided for conference rooms Electrical and television inputs and outlets, permanent wall screen, and acoustical treatment	200
Group projects and instruction in research	Flexible space, the equivalent of a classroom area, equipped for instructional purposes and needs	900-1000
Administration	Office space for 4 professional staff members Media program planning area	600-800
Workroom	The amount of space recommended will have to be increased if centralized cataloging and processing services are not available from a system media center	300-400
Maintenance and repair service	Major service to come from system center	120-200
Media production laboratory	Sinks, running water, electrical outlets	800-1000
Materials and equipment storage for production	Necessary temperature and humidity control	120
Stacks	Stacks for overflow books and audiovisual materials	400-800

APPENDIX C. Furniture Specifications

SHELVING

Width of section on centers. . . . . 3 feet

Depth
- Narrow. . . . . 8 inches
- Standard. . . . . 10 inches
- Oversize. . . . . 12 inches

Thickness. . . . . 13/16 inch

Height. . . . . 5-6 feet

Space between adjustable shelves. . . . . 10-10 1/2 inches
(Adjustable feature takes care of oversize books.)

No trim on uprights, shelves or cornices

Periodical Shelving
- Depth of slanting shelves. . . . . 16 inches
- Depth of shelves, straight across. . . . . 12 inches
- Depth of storage shelves. . . . . 12-15 inches

Picture book shelving
- Depth of shelves. . . . . 12 inches
- Space between adjustable shelves. . . . . 14-16 inches
- 1/4 inch upright partitions 5-6 inches high and 7-8 inches apart on each shelf

Phonograph record shelving
- Depth of shelves. . . . . 16 inches
- Space between adjustable shelves. . . . . 14-18 inches
- 1/4 inch upright partitions 5-6 inches high and 2 1/2 - 3 inches apart on each shelf
- (Display bins, now frequently preferred, are not yet as fully standardized as shelving.)

Capacity estimates:
- Number of books per 3-foot shelf when full:
  - Books of average size. 30
  - Reference books. 18
  - Picture books (with dividers). 60

TABLES (Variety of Heights)

Height. . . . . 25-28 inches
Width. . . . . 3 feet
Length. . . . . 5-6 feet
Diameter (round). . . . . 4 feet

CHAIRS (Variety of Heights)

Height. . . . . 14-17 inches

Chairs with curved backs and saddle seats are most comfortable.

FILES

Pamphlets, clippings, small pictures and maps... Legal size with hanging folders

Other. . . . . Vary with size of material

AUDIOVISUAL MATERIALS & EQUIPMENT STORAGE

Storage units for these materials and equipment items are not as standardized as library furniture, so specifications are not included.

APPENDIX D. Evaluating Audiovisual Materials

CURRICULUM RELATIONSHIPS

1. Will the material be usable in direct relation to a teaching unit? To a specific experience, or problem-solving activity?
2. Is the content to be communicated by the material useful and important? To the pupil? To the community? To society?
3. Does the difficulty level of the teaching purposes (the understandings, abilities, attitudes and appreciations) demand the help of the material being examined?
4. Will the material make a contribution to major teaching purposes? (or toward the major goals of the learners?)
5. Will the material be likely to call for vicarious experiencing, thinking, reacting, discussing, studying?
6. Is the content to be communicated presented in terms of problems and activities of the learners? (Logically arranged subject matter may be called for at advanced levels of study.)
7. Will the uses of the material being examined be obvious to teachers?
8. Is content to be presented by the material sufficiently rich in concepts and relationships?
9. Does the material possess appropriate content that facilitates the process of inference? Size? Temperature? Weight? Depth? Distance? Action? Odor? Sound? Color? Lifelikeness? Emotion?
10. Is the material accurate, typical, and up-to-date?
11. Is the kind of material uniquely adapted to the achievement of the desired teaching objective? When media are in programmed format for use in instructional systems, are published try-out results valid and convincing?
12. Is the content in the material in good taste?
13. Is the material likely to be of value for a period of seven to ten years?
14. Could the material be used conveniently within a regular class period?
15. Is the content of the material sufficiently rich in number of examples to warrant sound conclusions? That is, are both sides of an issue explored? If not, is the insufficiency pointed out?
16. If the item duplicates content in material already owned, is it sufficiently superior to warrant supplanting the older item?

TECHNICAL QUALITY RELATIONSHIPS

1. Is technical quality of the material artistic?
2. Is the producer's mode of communication adequate for the purpose? That is, is the message put over clearly, forcefully, in ways that attract and hold attention?
3. Are physical size, format, and color satisfactory?
4. Is workmanship in the construction of the material adequate?
5. Is the content to be presented free of conflicts and distractions?
6. Was careful planning by the producer obvious in the content and structure of the material?

7. Did the producer of the material set out to produce material for school audiences with competent educational consultants?

The prospective director would do well to supply for each of the preceding questions a specific example, either in the affirmative or negative, and to gain as much experience as possible by screening, viewing, listening, or otherwise examining materials from a wide variety of producers. The preceding general standards, applying to all audio-visual materials, will carry the burden of evaluation in any case, but there are important specific, supplementary standards that will also aid the media director and his teacher deputies in making correct decisions.

SPECIFIC CRITERIA

Additional criteria that apply to specific kinds or classes of audio-visual media are important to all who select materials on the basis of suitability of content instead of an eye-catching title or glowing superlative-filled advertisement. Such criteria may sometimes by themselves serve as the basis for a quick and correct judgement.

FOR MOTION PICTURES AND TELEVISION PROGRAMS

1. Are picture images sharp?
2. Is the sound intelligible and realistic?
3. Is there sufficient action?
4. Is continuity natural and understandable?
5. Is composition satisfactory?
6. Is content free of conflicts in music and speech or dialogue?
7. Are pictorial sequences of appropriate length?
8. Is pacing of the action appropriate?

FOR MODELS AND DISPLAY CASES

1. Is construction sturdy enough to withstand hard usage?
2. Is the size suitable for the material and the nature of the observation activities intended? Is the scale appropriate?
3. Are labels easily readable?
4. Are arrangements of models realistic?
5. Does the material contain sufficient details?

FOR PICTORIAL STUDY PRINTS, FILMSTRIPS AND SLIDES

1. Is the content free of irrelevant material?
2. Are the desirable details shown in proper size and number for optimum observation and correct conclusions?
3. Is photographic quality acceptable? Sharpness? Composition?
4. Are pictures free of distortion because of good balance between the artist's technique and educational needs?
5. Are the colors natural and desirable?
6. Are the pictures available in units or well organized sets?
7. Do sets of pictures provide adequate continuity and range?
8. Is the designated continuity of the pictures suitable and appropriate for the teaching purposes?
9. Are the captions and explanations readable and suitable for the teaching purposes?
10. Are captions and explanations of suitable length and in proper positions for the pictorial content being presented?

FOR AUDIO PROGRAMS

1. Are the sound effects realistic?
2. Is speech crisp and intelligible?
3. Is sufficient response-type action implicit in the content?
4. Is continuity between parts or sections unmistakable?
5. Is the program free of conflicts between background sounds and speech or dialogue?
6. Are programs on tape or discs of appropriate lengths?

FOR GRAPHIC CHARTS AND OVERHEAD PROJECTOR TRANSPARENCIES

1. Are the symbols understandable by the learners who are to observe them?
2. Will it be relatively easy for the teacher to bridge the gap between graphic symbols and the real situation?
3. Does the graphic material present the optimum amount of material for the grade level of the observers?
4. Are the labels readable at desirable viewing distance?
5. Is appropriate action implied?

FOR VISUALIZED PROGRAMMED LEARNING SEQUENCES AND MEDIA PACKAGES

1. Are steps in content small enough to minimize errors?
2. Is the role played by visual stimuli significant? For readiness purposes? For explaining difficult concepts or aspects of an item of content? To depict details of a situation for vicarious experiencing? To serve as source material in making detailed observations for comparisons?
3. Is the balance between verbal and graphic or pictorial symbols optimum for the objectives being achieved?
4. Are the try-out data for the program sufficiently valid and complete?
5. Are components of the program such as directions and motivation sections, response sheets, and hardware components, if required, well articulated and simple to use?
6. Is the medium, or are the media, used in the program appropriate to the presented content and required response?
7. Is the length of program sections appropriate for normal usage by class groups? (3)

APPENDIX E. Criteria for Media Equipment Selection

Criteria for Motion Picture Projectors

1. Noise. Does the projector operate quietly? Motor? Film Shuttle? Blower? Switch?
2. Steadiness of Picture. Is projected picture free of noticeable flutter?
3. Controls. Are controls sufficient for the intended use? Does "tone" control bring out bass and treble sound sufficiently?
4. Electronics. Is sound from speaker free of motor and projector noise at high-volume levels?
5. Threading. Can the projector be threaded quickly with a minimum danger of damage to film?
6. Automatic Threading. If threading is automatic, can the projector be threaded manually at the beginning, and also threaded and unthreaded at a point within a film with reasonable ease?
7. Rewind Process. Is the rewind mechanism fast, dependable, and reasonably constant in film tension?
8. Sound. Is film speed over sound drum sufficiently constant? Are audio quality characteristics, as for other audio instruments, satisfactory? Are output connections for sound distribution available and satisfactory?
9. Magnetic Sound. Are provisions for mixing music and voice adequate? Do splices run over playback head without distortion?

Criteria for Regular Slide Projectors

1. Balance. Is the base long enough to keep the projector in balance even though the bellows is extended?
2. Tilt Device. Is there an easy-to-operate vertical and horizontal tilting mechanism?
3. Ventilation. If a blower is not provided, is ventilation adequate for normal uses?
4. Noise. If a blower is provided, does it operate effectively and quietly?

Criteria for Combination Filmstrip and 2 x 2 inch Slide Projectors

1. Convenience in Change-over. Are the change-over parts easy to remove and insert correctly?
2. Accessories. Are automatic take-up mechanisms for filmstrips removable? May the projector be manually operated with standard slide changer?
3. Restrictions on User. Is the projectionist free to project his materials in his own way, with his own selection pattern, without restrictions and extra techniques?
4. Framing device. Are forming mechanisms sturdily constructed and properly braced?
5. Automatic Features. If the projector is of the automatic type, is remote-control operation possible and at the sole direction of the projectionist? If slide magazines are to be used, will they accommodate paper mounts, glass, and metal-bound slides intermixed?
6. Tilt Devices. Does the projector provide horizontal and vertical tilting devices?
7. Lenses. Are additional lenses available to permit a variety of picture sizes as needed?

8. Ventilation. Is blower operation adequate? Is projector free of defects that tend to shatter heat filter glasses?

9. Temperature. Is adequate light output achieved, together with desirable low-temperatures at the point where slides and filmstrips are inserted? At highest wattage operating levels, are materials spared the effect of buckling and warping?

Criteria for the Selection of Record Players

1. Range of Use. Does player have a microphone input for public address use? An extra speaker output for wider sound distribution? Will the player accommodate records at the four standard speeds? Are the kinds and number of input and output connections adequate for multipurpose use? Is the stereo or monaural provision adequate for intended usage?

2. Controls. Are the controls simple to operate? In plain view? Plainly marked?

3. Sound Quality Standards. (for each or all components) Is uniform frequency response range adequate for intended use? (In general, the wider the spread in cycles and the fewer the number of decibels stated, the better.) Is the turntable free of excessive "wow" or "flutter"? (The lower the percentage figure expressed, the better.)

4. Cartridges. Are cartridges easy to replace? Will the player accept standard makes of cartridges?

Criteria for Selection of Tape Recorders

1. Position of Heads. Can heads be reached easily for cleaning? Are heads easily accessible for realignment?

2. Adjustment of Control Mechanism. Are the drive and rewind mechanisms conveniently accessible for cleaning and adjusting?

3. Sound Quality Standards. Same as for record players. Also, does the recorder have a satisfactory signal-to-noise ratio? (The larger the number of decibels, the better.)

4. Range of Use. Does the stereo or monaural provide for record and/or playback adequate for intended usage? Does the range of operational speeds provide flexibility in use, or for the specific use intended? Are the kinds and number of input and output connections adequate for multipurpose use?

5. Controls. Are the controls simple to operate? In plain view? Plainly marked?

Criteria for Selection of Overhead Transparency Projectors

1. Projection stage. Will the projection stage accommodate an 8 x 10 inch (minimum) transparency projection area in both horizontal and vertical positions?

2. Temperature. Is adequate light output achieved without overheating the projection stage?

3. Blower. Does the blower operate effectively? Is the noise level sufficiently low?

4. Resolution power. Do the projection optics provide for adequate resolution power throughout the projection stage area normally used?

5. Tilt mechanism. Is the projector tilted by means of moving the head instead of the projection stage? Is the projection stage level in normal operation?

6. Illumination. Does the lamphouse accommodate lamps up to and including 1000 watts? Is the illumination even on the screen. Is the brightness level satisfactory? Is glare from the projection stage sufficiently low?

7. Controls. Are switches easy to operate? Plainly marked? Located in easy-to-use positions during projection? Does focusing arrangement permit easy access from a sitting position? Will the head remain in position at any given focus setting without slipping?

8. Are additional lenses available as accessories?

9. Mount Frame Guides. Are vertical and horizontal mount frame guides either built in on the projection stage or are they available as accessories? Are they easy to install if they have to be purchased separately?

10. Light-Weight Models. Does the projector provide for proper on and off switching? Make possible easy access to lamphouse and socket? Incorporate sturdy metal instead of plastic at movable joints and other points of likely breakage? Are focusing limits reasonable for normal usage? Is light output adequate for intended uses? (3)

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